Lower Colorado River Multi-Species Conservation Program

Balancing Resource Use and Conservation

Big Bend Conservation Area

2012 Annual Report

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

November 2013

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U.S. Fish and Wildlife Service
National Park Service
Bureau of Land Management
Bureau of Indian Affairs
Western Area Power Administration

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Colorado River Indian Tribes
Chemehuevi Indian Tribe

Conservation Participant Group

Ducks Unlimited
Lower Colorado River RC&D Area, Inc.
The Nature Conservancy

Lower Colorado River
Multi-Species Conservation Program

Big Bend Conservation Area

2012 Annual Report

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ACRONYMS AND ABBREVIATIONS

BBCA	Big Bend Conservation Area
LCR MSCP	Lower Colorado River Multi-Species Conservation Program
Reclamation	Bureau of Reclamation
SNWA	Southern Nevada Water Authority

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EXECUTIVE SUMMARY

The purpose of this annual report is to summarize all activities, including planning, designing, constructing, restoring, monitoring, and adaptive management, that have occurred at the Big Bend Conservation Area from October 1, 2011, through September 30, 2012. This document also contains sections describing the general background of the site, land and water ownership, current agreements, and constructed habitat areas as well as the past management of established land cover types. In addition, projected activities for fiscal year 2013, in terms of future development, management, and monitoring, will also be identified in this report. Adaptive management is expected to be a larger part of subsequent annual reports for this conservation area as more data regarding the effectiveness of management techniques and performance of the habitat become available.

1.0 CONSERVATION AREA INFORMATION

The Big Bend Conservation Area (BBCA) located in Laughlin, Nevada, consists of approximately 30 acres; landowners include the State of Nevada and the Southern Nevada Water Authority (SNWA). The property was originally a Boy Scouts of America Canoe Base and in use from the 1950s to the 1980s. After the Boy Scouts vacated the property, the SNWA worked to secure it for threatened and endangered species protection. The Lower Colorado River Multi-Species Conservation Program (LCR MSCP) has entered into a long-term partnership with the State and the SNWA to cooperatively manage the property for resident wildlife.

The site consists of two LCR MSCP land cover types: backwater and upland mesquite. The backwater of approximately 15 acres is home to the flannelmouth sucker, razorback sucker, and bonytail chub. The upland mesquite portion of the property, also 15 acres, has had invasive species removed and has been replanted with honey and screwbean mesquite.

1.1 Purpose

Backwater habitat maintained within the BBCA will be managed for the flannelmouth sucker, razorback sucker, and bonytail chub. The adjacent marsh habitat will be maintained for the least bittern and Yuma clapper rail. The upland mesquite habitat will be maintained to provide foraging habitat for additional LCR MSCP covered species and provide a venue for low-impact recreation.

1.2 Location

The BBCA is located in Reach 3, on the Nevada side of the LCR MSCP planning area at River Mile 266. The total project footprint is 30 contiguous acres. Figures 1–2 describe the location of the BBCA in more detail.

1.3 Landownership

The 15 acres of backwater habitat is owned by the State of Nevada. The additional 15 acres of upland mesquite is owned by the SNWA. The property is cooperatively managed by all landowners through a Land Use Agreement. The agreement describes the roles and responsibilities of each party as well as the designated land uses for the conservation area.

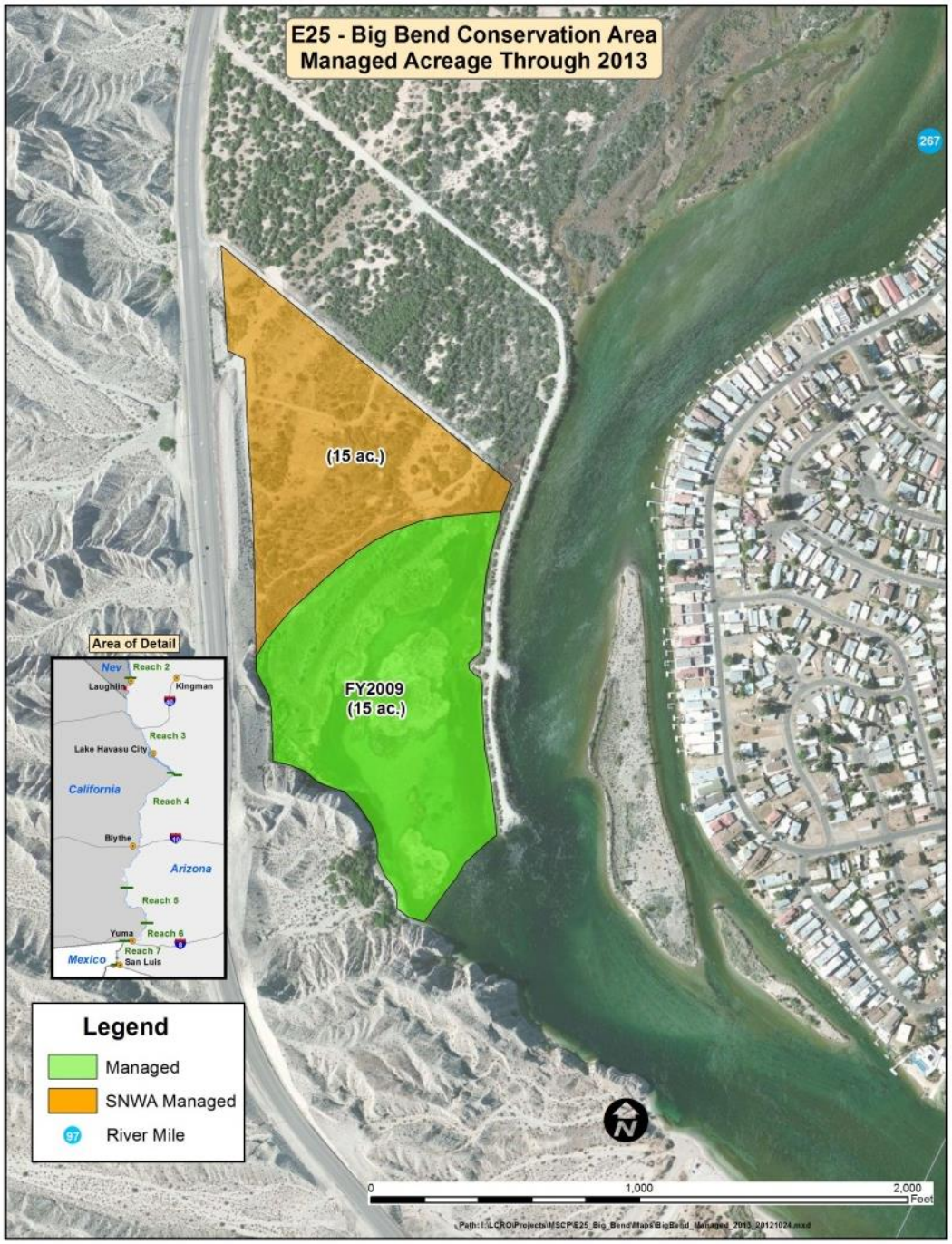

Figure 1.—The BBCA.

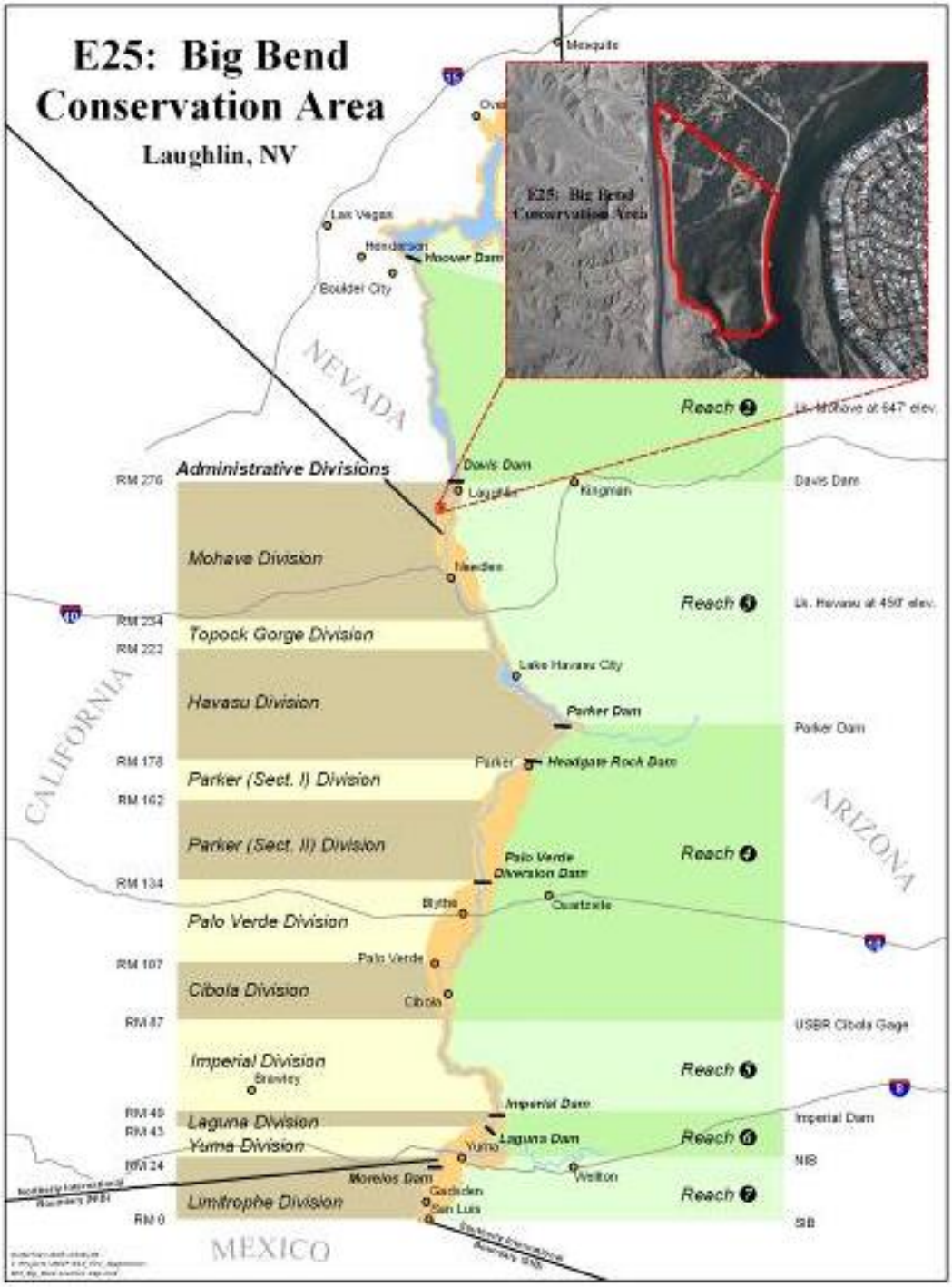

Figure 2.—LCR MSCP planning area with the BBCA.

1.4 Water Right Information

The 15 acres of upland mesquite maintains a 10 acre-foot per year water entitlement in the State of Nevada. However, the site utilizes less than 2 acre-feet per year for irrigation of the restored mesquite planting. It is envisioned that after 4 years of consecutive irrigation, no water will be required due to the revegetation area utilizing groundwater.

1.5 Agreements

In 2008, a Land Use Agreement for protection of the backwater and upkeep of the mesquite area was finalized by all parties.

1.6 Public Use

The upland mesquite area consists of a low-impact recreational hiking trail and a wildlife viewing area. Interpretive signage is located at the gravel parking lot for visitors. Although the LCR MSCP does not have substantial involvement in the interpretive area, cooperation is necessary to ensure all activities conducted in the upland area are consistent with the program's goals and objectives.

The backwater area has been designated a no-wake zone. Coordination between the Nevada Department of Wildlife and the Nevada Wildlife Commission resulted in the installation of two buoys at the entrance to the backwater, consistent with the motion that was passed by the Wildlife Commission in fiscal year 2010 for Commission General Regulation 382, Colorado River Regulation, LCB File No. R004-10. Under Regulation 382, the BBCA backwater was approved as a no-wake zone. The buoys restrict access to the backwater to only wake-less speed in order to decrease disturbance to wildlife.

1.7 Law Enforcement

The SNWA is responsible for law enforcement at the BBCA. The Bureau of Reclamation (Reclamation) continues to work with the SNWA and local officials to ensure their activities do not conflict with the LCR MSCP Habitat Conservation Plan.

1.8 Wildfire Management

A LCR MSCP Conservation Area Specific Fire Management and Law Enforcement Strategy has been finalized for the BBCA and is posted on our Web site. The LCR MSCP will continue to work with local State and Federal fire agencies to reduce the risk of wildland fires and maintain clear lines of communication among agencies.

2.0 HABITAT DEVELOPMENT AND MANAGEMENT

There were no new plantings at the conservation area during fiscal year 2012. A youth conservation crew was brought in to conduct trail and habitat maintenance activities. Salt cedar was cut out and mulched onsite. Mulched material was spread on the trails to control dust and erosion.

2.1 Irrigation

In August 2012, the groundwater well onsite that supplies irrigation water failed. A diagnostic report showed that the electric motor powering the pump was at fault, and a replacement motor would be required.

In September 2012, a temporary gasoline pump was brought in to determine if the existing well, irrigation manifold, and filters would be functional using the temporary pump. It was discovered that a portable pump would supply adequate water for the irrigation system, and a new electric pump would not be necessary.

2.2 Site Maintenance

Maintenance activities for the upland mesquite areas consist of maintaining roads, garage upkeep, and irrigation system repair.

Annually, rain events cause erosion of the surrounding mountain side, and sand and gravel is deposited on the access road. Additionally, standing water pools up on the access road, and as vehicles enter the property, the road becomes worse and worse. Heavy equipment was brought in to recontour the road and lay a gravel base.

The maintenance garage was constructed by the Boy Scouts and is a well-built structure that provides the only dry storage onsite. The garage required a full cleanout, pressure washing, and weatherization to help keep out insects, rodents, and snakes.

The aboveground irrigation system provides water to individual plants through emitters and a series of connecting tubing. Salts and sediment clogged the emitters, and they must be replaced. The connecting lines are also prone to rabbit damage and must be repaired.

3.0 MONITORING

3.1 Backwater Monitoring

3.1.1 Native Fish

Monitoring of the BBCA is accomplished through seasonal fish monitoring trips: one trip in December and one per month from March through May. This monitoring includes electrofishing, trammel netting, and larval light trapping. Due to daily fluctuations in river stage, locations are selected based on the current or projected water level and historical contacts of native fish. Water quality profiles were conducted during each fish monitoring trip and quarterly for the remainder of the year. Phytoplankton and zooplankton monitoring was conducted quarterly.

3.1.2 Fish Monitoring

Electrofishing surveys were conducted during December, March, April, and May. The surveys encompassed all areas of the backwater that are navigable during the time of the survey. Generator times range from 600–1,200 seconds per night depending on the size of the backwater during the survey (dependent on river stage). Few fish are generally contacted during these surveys, and this pattern continued in fiscal year 2012. Largemouth bass (eight), redear sunfish (four), goldfish (four), carp (two), and smallmouth bass (one) were contacted during this year's surveys. One razorback was contacted during the May survey; the fish was a repatriate that had been released upstream at Laughlin Lagoon 2 months earlier.

Trammel netting efforts included small and large meshed nets (1/2 and 1½ inches) in order to target multiple size classes of fish. To prevent the nets from being exposed from drops in river stage, all of them were set in areas of the backwater that retain water at the lowest water surface elevations. Non-native captures were most common, which is characteristic of connected backwaters and similar to the electrofishing results. They included the typical suite of non-native species and represented a variety of size classes. The netting effort also resulted in the capture of six razorbacks: one in April and five in May. All were repatriates that were released in Laughlin Lagoon in March of this year.

Larval fish surveys were conducted from March to May and coincided with previously documented native fish larval emergence. During each month, surveys were conducted at six locations over 2 nights at 15 minutes per site. No fish were contacted in March; two smallmouth bass and one flannelmouth (7 millimeters) were contacted in April. Three flannelmouth and six carp were contacted in May.

3.1.3 Water Quality

Water quality profiles were measured using a multi-parameter probe at 0.5-meter increments at a single location from the deepest portion of the backwater. A profile was taken during each of the four fish monitoring trips. Additional trips were conducted in January, July, August, and September. Due to its hydrological connection with the river, this backwater maintains excellent water quality throughout the year. Temperature, dissolved oxygen, pH, and conductivity remain within the known thresholds for native fish (figure 3).

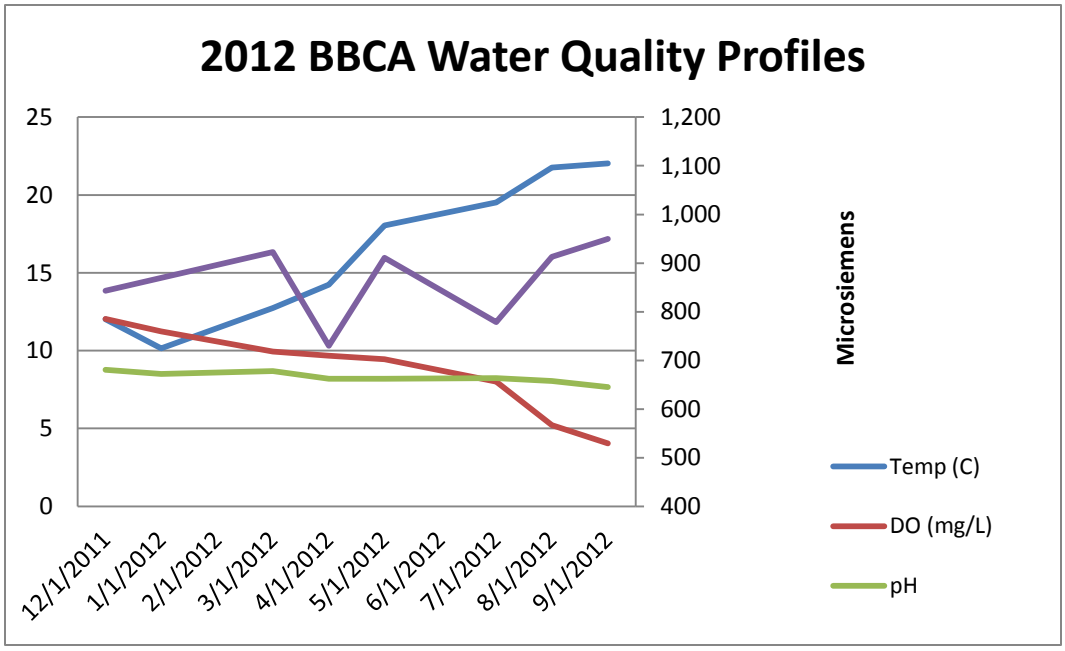

Figure 3.—BBCA 2012 water quality profile means (conductivity is displayed on the secondary vertical axis).

3.1.4 Phytoplankton and Zooplankton

Phytoplankton and zooplankton monitoring was conducted quarterly throughout the year, and all samples were taken from a single location at the deepest portion of the backwater. Samples were collected from the entire water column using standardized vertical sampling methods. Both phytoplankton and zooplankton results were relatively low for a backwater. They were, instead, representative of the river (figures 4 and 5), which was due to the continuous exchange of water that is characteristic for this site.

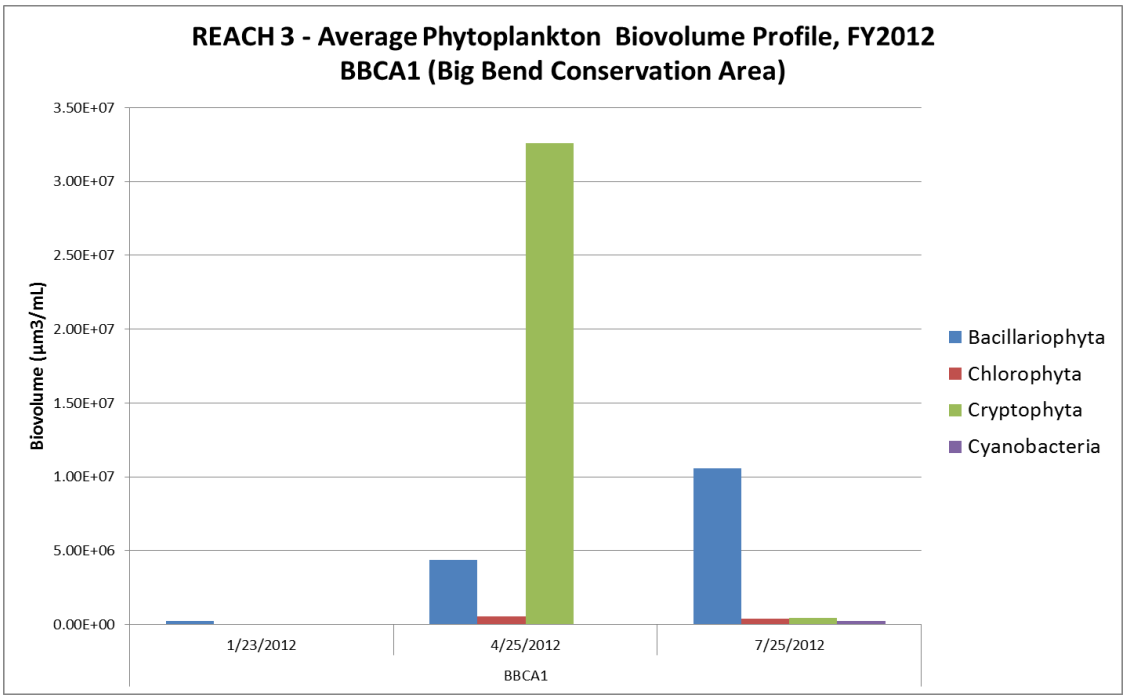

Figure 4.—BBCA 2012 average phytoplankton biovolume profile.

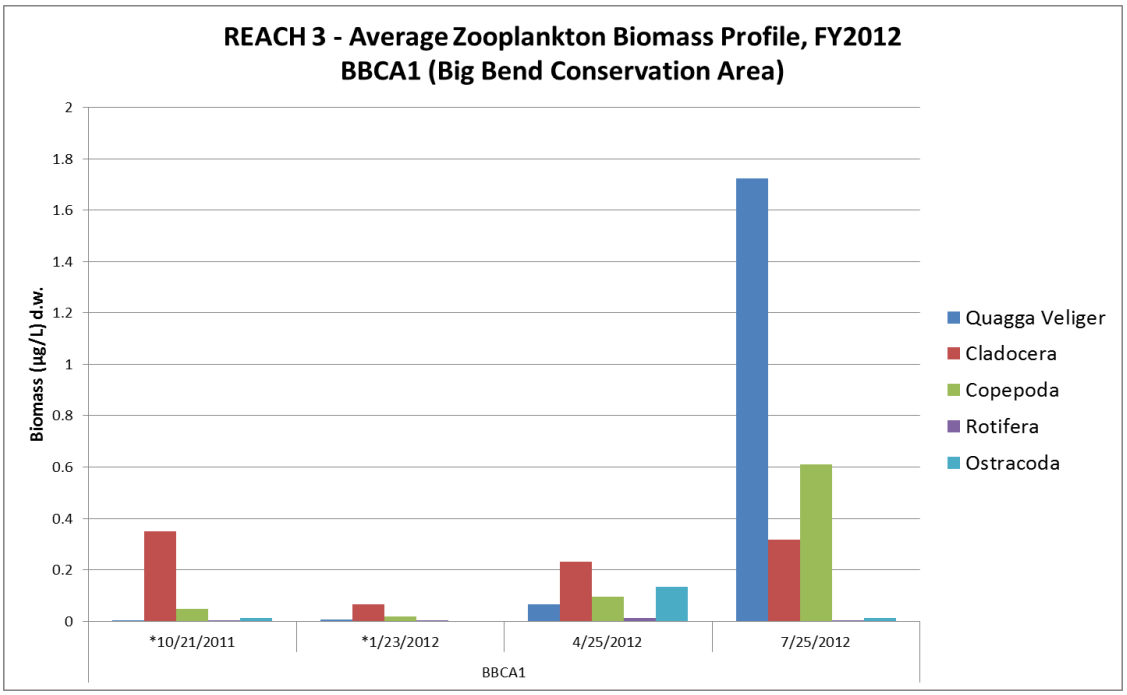

Figure 5.—BBCA 2012 average zooplankton biomass profile.

3.2 Avian Monitoring

3.2.1 Marsh Bird Surveys

Three marsh bird surveys were conducted between March 15 and May 31, 2012, at four locations using the National Marsh Bird Monitoring Protocol (Conway 2008). There were no LCR MSCP covered species detected. A sora and Virginia rail were detected in the first survey period.

3.3 Small Mammal Monitoring

3.3.1 Rodent Monitoring

Rodent traps were set in the spring (March) and fall (October). Two Colorado River cotton rats (*Sigmodon plenus arizonae*) were captured in the spring (male and female), and three were captured in the fall (male). This was the first record of the species in Nevada since the 1960s. The rats were found in a mixture of Baccharis (*Baccharis* sp.) and grasses, including bushy bluestem (*Andropogon glomeratus* var. *scabriglumis*), knotroot bristlegrass (*Seteria gracilis*), and spiny aster (*Chlorocantha spinosa*).

4.0 HABITAT CREATION CONSERVATION MEASURE ACCOMPLISHMENT

The Final Habitat Creation Conservation Measure Accomplishment Tracking Process was finalized in October 2011 (Reclamation 2011). The BBCA was brought into the LCR MSCP to benefit the flannelmouth sucker (FLSU1), razorback sucker (RASU2), and bonytail (BONY2), including other covered species.

In 2012, no additional acres of backwaters were creditable due to the site reaching maturity (table 1).

Table 1.—Species-specific habitat creation conservation measure creditable total acres for 2012

Species-specific habitat creation conservation measure	FLSU1	RASU2	BONY2
Creditable acres in 2012	0	0	0
Total, including previous years	15	15	15

5.0 ADAPTIVE MANAGEMENT RECOMMENDATIONS

Adaptive management relies on the initial receipt of new information, the analysis of that information, and the incorporation of the new information into the design and/or direction of future project work (Reclamation 2007). Under the Adaptive Management Program, habitat creation sites will be assessed for biological effectiveness and whether they fulfill the conservation measures outlined in the Habitat Conservation Plan for 26 covered species and potentially benefit 5 evaluation species. Post-development monitoring and species research results will be used to adaptively manage habitat creation sites after initial implementation. Once monitoring data are collected over a few years, and then analyzed for the BBCA, recommendations may be made through the adaptive management process for site improvements in the future.

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